1) When we consider data in the data warehouse to be time-variant, we mean:
   A) that the time of storage varies.
   B) data in the warehouse contain a time dimension so that they may be used to study trends and changes.
   C) that there is a time delay between when data are posted and when we report on the data.
   D) none of the above.

2) Which of the following advances in information systems contributed to the emergence of data warehousing?
   A) Improvements in database technology, particularly the relational data model
   B) Advances in computer hardware, especially affordable mass storage and parallel computer architectures
   C) Advances in middleware products that enabled enterprise database connectivity across heterogeneous platforms
   D) All of the above

3) Which of the following factors drive the need for data warehousing?
   A) Businesses need an integrated view of company information.
   B) Informational data must be kept together with operational data.
   C) Data warehouses generally have better security.
   D) None of the above.

4) Operational and informational systems are generally separated because of which of the following factors?
   A) A data warehouse centralizes data that are scattered throughout disparate operational systems and makes them readily available for decision support applications.
   B) A properly designed data warehouse adds value to data by improving their quality and consistency.
   C) A separate data warehouse eliminates contention for resources that results when informational applications are confounded with operational processing.
   D) All of the above.

5) A data mart is a(n):
   A) enterprisewide data warehouse.
   B) smaller system built upon file processing technology.
   C) data warehouse that is limited in scope.
   D) generic on-line shopping site.

6) A logical data mart is a(n):
   A) data mart consisting of only logical data.
   B) data mart created by a relational view of a slightly denormalized data warehouse.
   C) integrated, subject-oriented, detailed database designed to serve operational users.
   D) centralized, integrated data warehouse.
7) A database action that results from a transaction is called a(n):
A) transition.
B) event.
C) log entry.
D) journal happening.

8) Data that are never physically altered once they are added to the store are called ________ data.
A) transient
B) override
C) periodic
D) complete

9) A star schema contains both fact and ________ tables.
A) narrative
B) cross functional
C) dimension
D) starter

10) Every key used to join the fact table with a dimension table should be a ________ key.
A) primary
B) surrogate
C) foreign
D) secondary

11) The level of detail in a fact table determined by the intersection of all the components of the primary key, including all foreign keys and any other primary key elements, is called the:
A) span.
B) grain.
C) selection.
D) aggregation.

12) An expanded version of a star schema in which all of the tables are fully normalized is called a(n):
A) snowflake schema.
B) operational schema.
C) DSS schema.
D) complete schema.

13) A class of database technology used to store textual and other unstructured data is called:
A) mySQL.
B) NoSQL.
C) KnowSQL.
D) PHP.
14) The use of a set of graphical tools that provides users with multidimensional views of their data is called:
A) on-line geometrical processing (OGP).
B) drill-down analysis.
C) on-line analytical processing (OLAP).
D) on-line datacube processing (ODP).

15) Going from a summary view to progressively lower levels of detail is called data:
A) cubing.
B) drill-down.
C) dicing.
D) pivoting.

16) Data governance can be defined as:
A) a means to slow down the speed of data.
B) high-level organizational groups and processes that oversee data stewardship.
C) a government task force for defining data quality.
D) none of the above.

17) High-quality data are data that are:
A) accurate.
B) consistent.
C) available in a timely fashion.
D) all of the above.

18) External data sources present problems for data quality because:
A) data are not always available.
B) there is a lack of control over data quality.
C) there are poor data capture controls.
D) data are unformatted.

19) One simple task of a data quality audit is to:
A) interview all users.
B) statistically profile all files.
C) load all data into a data warehouse.
D) establish quality metrics.

20) One way to improve the data capture process is to:
A) allow all data to be entered manually.
B) provide little or no training to data entry operators.
C) check entered data immediately for quality against data in the database.
D) not use any automatic data entry routines.

21) TQM stands for:
A) Thomas Quinn Mann, a famous data quality innovator.
B) Total Quality Manipulation.
C) Transforming Quality Management.
D) Total Quality Management.
22) The methods to ensure the quality of data across various subject areas are called:
A) Variable Data Management.
B) Master Data Management.
C) Joint Data Management.
D) Managed Data Management.

23) In the ________ approach, one consolidated record is maintained, and all applications draw on that one actual "golden" record.
A) persistent
B) identity registry
C) federated
D) integration hub

24) All of the following are ways to consolidate data EXCEPT:
A) application integration.
B) data rollup and integration.
C) business process integration.
D) user interaction integration

25) ________ duplicates data across databases.
A) Data propagation
B) Data duplication
C) Redundant replication
D) A replication server

26) A characteristic of reconciled data that means the data reflect an enterprise-wide view is:
A) detailed.
B) historical.
C) normalized.
D) comprehensive

27) A method of capturing only the changes that have occurred in the source data since the last capture is called ________ extract.
A) static
B) incremental
C) partial
D) update-driven

28) A technique using artificial intelligence to upgrade the quality of raw data is called:
A) dumping.
B) data reconciliation.
C) completion backwards updates.
D) data scrubbing.
29) An approach to filling a data warehouse that employs bulk rewriting of the target data periodically is called:
A) dump mode.
B) overwrite mode.
C) refresh mode.
D) update mode.

30) The process of combining data from various sources into a single table or view is called:
A) extracting.
B) updating.
C) selecting.
D) joining.

31) _______ is a technical function responsible for database design, security, and disaster recovery.
A) Data administration
B) Database administration
C) Tech support
D) Operations

32) A data warehouse administrator has which of the following responsibilities?
A) Build and administer an environment supportive of decision-support applications
B) Build a stable architecture for the data warehouse
C) Develop service level agreements with suppliers and consumers of data for the data warehouse
D) All of the above

33) Which of the following threats involves outside parties using information to embarrass a company?
A) Accidental loss
B) Theft and fraud
C) Loss of confidentiality
D) Loss of data integrity

34) Guidelines for server security should include all of the following EXCEPT:
A) securing the network between client and server.
B) guidelines for password lengths.
C) password naming conventions.
D) guidelines for frequency of password changes.

35) While views promote security by restricting user access to data, they are not adequate security measures because:
A) an unauthorized person may gain access to a view through experimentation.
B) all users can read any view.
C) a view's data does not change.
D) none of the above.
36) A trigger can be used as a security measure in which of the following ways?
A) To prohibit inappropriate actions
B) To cause special handling procedures to be executed
C) To cause a row to be written to a log file
D) All of the above

37) Controls designed to restrict access and activities are called:
A) schemas.
B) business rules.
C) encryption controls.
D) authorization rules.

38) A device to measure or detect fingerprints or signatures is called a(n) ________ device.
A) biometric
B) view
C) ink
D) laser

39) An audit trail of database changes is kept by a:
A) change control device.
B) subschema.
C) before image.
D) journalizing facility.

40) A DBMS periodically suspends all processing and synchronizes its files and journals through the use of a:
A) checkpoint facility.
B) backup facility.
C) recovery manager.
D) database change log

41) A discrete unit of work that must be processed completely or not at all within a computer system is called a:
A) change control device.
B) transaction.
C) before image.
D) journalizing facility.

42) A ________ is a DBMS module that restores the database to a correct condition when a failure occurs.
A) backup facility
B) recovery manager
C) restart facility
D) transaction logger

43) ________ is used to undo unwanted database changes.
A) Rollback
B) Rollforward
C) Restart
D) Encryption
44) The actions that must be taken to ensure data integrity is maintained during multiple simultaneous transactions are called _______ actions.
A) logging  
B) concurrency control  
C) transaction authorization  
D) multiple management

45) A(n) _______ prevents another transaction from reading and therefore updating a record until it is unlocked.
A) record controller  
B) exclusive lock  
C) authorization rule  
D) shared lock

46) A(n) _______ is a procedure for acquiring the necessary locks for a transaction where all necessary locks are acquired before any are released.
A) record controller  
B) exclusive lock  
C) authorization rule  
D) two-phase lock

47) A repository of information about a database that documents data elements of a database is called a:
A) schema.  
B) subschema.  
C) view.  
D) data dictionary.

48) A(n) _______ stores metadata about an organization's data and data processing resources.
A) DBA  
B) information repository  
C) organizational system catalog  
D) data dictionary

49) Which of the following is NOT an area of concern when trying to maintain a well-tuned database?
A) Memory usage  
B) CPU usage  
C) Input/output contention  
D) User interface design

50) A(n) _______ is submitted by a DBA to test the current performance of a database or predict the response time for queries.
A) elusive query  
B) performance test  
C) heartbeat query  
D) none of the above